DOCKET NO. 03-0371

PUBLIC UTILITIES COMMISSION

CONSUMER ADVOCATE'S RESPONSES TO HECO'S INFORMATION REQUESTS ON THE CONSUMER ADVOCATE'S WRITTEN DIRECT TESTIMONY

The responses to the following information requests were prepared by Mr. Herz, who is the sponsor of the responses.

HECO/CA-DT-IR-1 Ref: CA-T-1, Page 61, Lines 1-19
If unbundled transmission, distribution and ancillary rates are revenue neutral, then why is it necessary to unbundle the existing rates to facilitate DG in Hawaii?

RESPONSE: The existing rate charged for electric service must be unbundled to determine the components reflecting the individual charges for transmission and distribution, generation and generation ancillary services in order to allow the utility to charge customers for the individual service provided (e.g., transmission and distribution versus generation). With unbundled rates, the utility may lose the generation related revenues when a customer chooses to install a customer-sited DG, but the utility will not lose the revenues associated with the transmission and distribution services if the customer remains connected to the utility's grid. In addition, the utility will be able to appropriately charge the customer for generation provided by the utility during those periods when the customer's on-site generation is not able to produce sufficient energy to meet the customers' needs. Furthermore, the utility will also be able to assess a charge for

the capacity that must be held in reserve to provide service, when needed by the customer. If the existing rates are not unbundled the utility will lose all revenues associated with the lost kWh sales due to the installation of a customer sited DG unit, even though the utility will still be required to provide some level of service to the customer. This situation will shift responsibility for the cost of the services that are provided by the utility on to the customers who do not install DG facilities, resulting in the DG customer being subsidized by other customers within that rate class.

This statement was not intended to address the revenues associated with the loss in kwh sales due to the installation of on-site generation to meet all or a part of a customer's energy needs. Rather, as described in the referenced testimony, the referenced testimony addresses how existing rates could be unbundled if the Commission desired to do so at this time rather than wait till the utility's next rate case filing. The unbundling of the utility's existing rates is not expected to generate more revenues than the revenue requirement upon which the existing bundled rates were based. Therefore unbundling the existing rates for each rate class would be revenue neutral.

Under the existing rate structure and the CA's proposed unbundled rate structure, what would be the bill impact difference to a DG customer?

RESPONSE: With the unbundled rate structure, customers whose load is served in part or entirely by customer-sited generation would avoid paying for services no longer provided by the utility. As discussed in response to the above subpart of this information request, unbundling rates will allow the DG customer to only compensate the utility for services that are provided by the utility.

HECO/CA-DT-IR-2 Ref: CA-T-1, Page 74, Lines 12-18
Does the CA believe that HECO's proposed Schedule CHP Facilities Charge provides an adequate "offset in the form of contribution in aid of construction or other compensation" and that the capital costs for the CHP system should be included in HECO's rate base?

RESPONSE: It would not be appropriate to respond affirmatively or negatively before further evaluation of HECO's proposed Schedule CHP application is done and issues in that docket are addressed. When considering whether the capital costs of the CHP system should be included in HECO's rate base this matter, it will be important to determine whether the Schedule CHP Facilities Charge recovers all of the non-electric portion of the CHP system costs, and whether the CHP system electric output is used for all customers just like any other utility generating unit and not to the benefit of a specific customer or a group of customers. However, it appears that HECO's proposed Schedule CHP charge provides a benefit to specific customers in the form of a reduced electric charge for customers with a utility-owned CHP system. See also the response below that addresses this concern in greater detail.

Please explain why it would be questionable to include the CHP system costs in rate base, as proposed in HECO's CHP Program application, Docket No. 03-0366.

RESPONSE: A concern that raises questions is whether HECO's proposed Schedule CHP allows a benefit to accrue to a specific customer

in the form of a reduced electric charge for customers with a utility CHP system installed at the customer's location. If the utility CHP system output is used for all customers and the utility CHP system costs is included in the utility's rate base applicable to all customers, then the questionable concern is:

1. whether a benefit that is given to a specific customer (i.e., the customer with the utility CHP system) in the form of a reduced electric charge based on the electrical output of the utility's CHP system is reasonable; and

2. whether the difference in treatment of a customer with a utility-owned CHP system from a customer with a non-utility owned CHP system as proposed by HECO in Docket No. 03-0366 is reasonable, non-discriminating and not anti-competitive.

HECO/CA-DT-IR-3 Ref: CA-T-1, Page 79, Lines 5-7
The CA recommends that the Commission require each utility to prepare and provide unbundled rate structures for the Commission approval. What does the CA recommend to the Commission regarding the subsidies embedded in the HECO, HELCO and MECO's current rates with its recommended unbundling of rates?

RESPONSE: The inter-class subsidies embedded in current rates would not be affected by the unbundling of the current authorized bundled rates. Such inter-class subsidies would be evaluated, considered and dealt with in the context of the utility's future rate case filing. Likewise, intra-class subsidies for example resulting from low demand and high energy charges would be addressed and dealt with in future rate case filings.

The unbundling of transmission, distribution and generation ancillary service charges in the bundled rates, however, would address the revenue loss concern and the potential subsidization of customers with customer-sited DG by other customers. This subsidization would occur by having customers compensate the utility for the transmission, distribution and generation ancillary services provided by the utility to customers with customer-sited DG. See also the response to HECO/CA-DT-IR-1 and 4.

HECO/CA-DT-IR-4 Ref: CA-T-1, Page 60, Lines 16-19
Please explain how the CA's proposal to unbundle rates should be done such that it "does not disrupt bundled rates used by the electric utility companies, and the Commission's gradual approach in addressing inter- and intra-rate class subsidies".

RESPONSE: With respect to future rate case filings, the rate making procedure will remain essentially unchanged in addressing inter-and intra-rate class subsidies. Presently the three "steps in utility rate making are: (1) determination of the utility's revenue requirements or total costs of providing service; (2) preparation of cost of service study to allocate costs; and (3) rate design." (See HECO T-5, page 2, lines 1-3).

The first step or starting point of the process will determine the utility's revenue requirement. This step establishes the amount of revenue to be derived from all classes of customers at the current authorized rates.

The second step is to prepare a cost of service study to allocate the costs incurred by the utility among the various services and customer classes. The costs of service study is then used to establish the revenue target for each rate class; (i.e., how much of the utility's total revenue requirement will be allocated to and come from each rate class under the new rates resulting from the utility's rate case filing). Based upon the revenue target, one then determines the rates that would be required to fully compensate the utility for the costs of providing

service to each rate class. The ideal situation is one where each rate class' rates provide the utility with an opportunity to earn the same rate of return as that upon which the revenue requirement was based.

After determining the rates in step 2, a decision may be made that a particular rate class(es) would not be able to pay the determined rates. The result may be to propose rates that would have one rate class pay more than the class cost of service, while another rate class would pay less than the class cost of service, resulting in inter-class cross subsidies. The cross subsidy between rate classes (i.e., inter-class subsidies) is thus the difference between a class' total cost of service and the total class revenue requirements that the rates will be designed to collect (see HECO T-5, page 12, lines 7-19).

The third step, rate design, involves the development of a rate structure and rates for each rate class that, when applied to the billing units of that rate class, generates the revenue that matches the revenue target for that rate class from the second step, as may be adjusted. The third step involves a number of considerations including the recovery of demand and customer related costs in the demand and energy charges. A utility's authorized rates may allow for the recovery of demand costs

(i.e., fixed costs) in the energy charges which results in intra-class subsidies among customers in a given rate class.

As with the inter-class subsidies, the intra-class subsidy issue will be addressed in the rate case proceeding and ultimately dealt with by the Commission. The manner that the utility's existing rates could be unbundled so as to not disrupt inter- and intra-class subsidies is described in the direct testimony. (See CA-T-1, page 60, line 20 through page 61, line 20; and the response to HECO/CA-DT-IR-3.)

The unbundling of rates, which would generally occur in step 3 of the process described above, could but does not have to involve breaking down the rates into every unbundled component. On the other hand, the unbundling could be as simple as modifying the rate structure so that DG customers pay for the transmission, distribution and generation services provided by the utility.

The class cost of service model used to develop rates should recognize the cost of services provided by the utility to customers using customer-sited generation to serve their load. These costs will generally include transmission, distribution, and back-up generation services from the utility. The level of detail and effort to develop the unbundled rates should be balanced with the information available, the cost of developing additional

data, and the magnitude of the DG market and its impact on the utility's revenue recovery and revenue stability. In any event, the amount of cross-subsidy between and within rate classes is an issue separate and apart from rate unbundling. As stated above, these issues will ultimately be addressed in the Commission's allocation of the utility's total revenue requirement among the utility's rate classes.

HECO/CA-DT-IR-5 Ref: CA-T-1, Page 75, Lines 7-13
Please confirm that the CA's position stated in the referenced statements refer to utility-owned/installed CHP systems.

RESPONSE: Yes, with the qualifications that:

1. the utility CHP project electric output does not benefit a specific customer, such as in the form of an energy rate discount (see the concern on this point addressed in the response to HECO/CA-DT-IR-2);
2. the utility CHP project is part of implementing the utility's lowest, reasonable cost plan as determined from the utility's IRP and selected through a competitive bidding process; and
3. the utility's unbundled rates are applied in a non-discriminating manner.

HECO/CA-DT-IR-6

Ref: CA-T-1, Page 8, Lines 13-14
The testimony states "A competitive bid process should be established for new generation, including DG resources."
Since many DG or CHP projects may be driven by customer choice, is the CA suggesting that when customers want DG or CHP, the Commission establish a process by which these customers will be required to competitively bid the projects?

RESPONSE:

No, the Commission's regulatory jurisdiction is over the actions of the utility, and not the utility's customers in this regard. Thus, customers considering the installation of customer-sited DG or CHP generation to serve the customer's load would not be subject to the competitive bid process discussed in the referenced testimony. The need to install generation that has been identified by the utility in the utility's Commission approved IRP process, however, would be subject to the competitive bid process. The output of these DG projects or CHP programs would be sold to and used entirely by the utility, for example substation-sited DG. These would be DG projects or CHP projects that otherwise would be placed in service by the utility in conjunction with its IRP plan. On the other hand, customer-choice, customer-sited DG projects or CHP systems that are installed independent of or not in conjunction with the utility's competitive bid IRP process and whose output (i.e., that which is in excess of the customer's energy need) is sold to the utility would be compensated at the utility's avoided cost rates, unless the output is sold under a net-metering arrangement.

If yes, what procedures and bidding criteria is the CA suggesting be used?

RESPONSE: The competitive bidding procedures and bidding criteria will be addressed in Docket No. 03-0372.

If no, what would determine which DG or CHP projects would be subject to the bidding process?

RESPONSE: DG or CHP projects which have been identified as necessary through the utility's IRP process to meet the utility's system needs would be subject to competitive bidding. See also the response to the first part of this information request.

HECO/CA-DT-IR-7

Ref: CA-T-2, Page 18, Lines 3-8
The testimony states "Biomass generating projects have been developed in several states and are usually associated with water treatment facilities or other industries that produce the fuel source for the facilities such as wood waste or other biological waste that can be processed."

Is the CA aware of any biomass generating projects in which the biomass fuel is grown solely for use in the electricity generation process?

RESPONSE: We are not aware of any biomass generating project where the fuel is grown solely for electricity generation. The referenced testimony is offered to support the point that renewable energy technologies, such as biomass projects, are very site specific and are located at or near the fuel source (see CA-T-1, page 16, lines 16-22). This is in contrast to fossil-fuel technology where the fuel is oftentimes transported to the generator.

If so, please provide the names and locations of such facilities.

RESPONSE: Not applicable, see response above.

HECO/CA-DT-IR-8 Ref: CA-T-1, Exhibit CA-101, Page 1 of 5
The CA classifies fuel cells as 'Dispatchable".
Can the CA provide more information about the dispatchability of fuel cells and its ability to follow load and provide operating reserve?

RESPONSE: The context of the information provided about fuel cells was to indicate the types of DG technologies that were available. The specific term "dispatchable" indicates that a fuel cell can be called on for energy as contrasted to wind energy that is not callable except during periods when the wind is blowing.

Are there any fuel cell systems currently in commercial operation that are being dispatched by utilities to meet peak demand (i.e., ramped up or down by the utility to meet increasing or decreasing load)?

RESPONSE: As explained in the preceding response, the testimony was not meant to state that the energy from fuel cell systems can be dispatched to match the load. Rather the intent was to state that fuel cell energy is not as-available energy.

Can the CA provide information that ramping up or ramping down will not degrade the fuel cell stack performance and operational life?

RESPONSE: See the response to the preceding information request.

HECO/CA-DT-IR-9

Ref: CA-T-1, Page 35, Lines 15-20
The testimony states "If significant quantities of DG were installed inside the Honolulu load pocket, particularly firm dispatchable DG, such DG installations may alleviate some of the delivery system constraints into the Honolulu system load pocket and possibly delay the need date for additional firm resources, as well as the planned transmission system upgrades."

If DG is able to defer planned transmission upgrades, should the utility install DG resources if the capital and O&M costs of installing the DG resources are higher than installing the transmission system upgrades?

RESPONSE:

The utility should install DG resources to defer planned transmission upgrades if doing so results in the lowest reasonable cost for meeting the utility's customers energy needs. The action plan that is deemed to be lowest reasonable cost plan will be determined through the IRP process. It is possible that the utility's IRP may determine the installation of DG as being the lowest reasonable cost when considering the external costs associated with the various options, even if the DG capital and O&M costs are higher than installing transmission upgrades.

HECO/CA-DT-IR-10 Ref: CA-T-1, Page 37, Lines 4-5
The testimony states "The utilities' IRP needs to identify the geographic locations, feeder locations and range of capacity that could be implemented by DG facilities."

With the presentations on transmission and distribution planning that have been made by HECO at the IRP Technical Committee meeting on April 23, 2004, does the CA believe that HECO's processes and proposed analysis for the IRP-3 are adequate to identify the geographic locations, feeder locations and range of capacity that could be implemented by DG facilities?

RESPONSE: The Consumer Advocate is unable to provide a response to the posed request because HECO has not, to-date, provided any analysis that identifies the impact of the above on HECO's T&D system. In all of the IRP presentations, the Company states that planning for T&D system infrastructure is part of the IRP process and offered discussion on the purpose of the T&D system. The Company, however, has not provided any baseline analysis of the T&D system to the IRP committee members, which identifies areas where improvements or additional resources may be needed in the near and long term. Thus, the IRP committee members have not had an opportunity to discuss the need for such improvements, or how that need could be alleviated through other actions such as the installation of DG sited closer to the load source.

The Consumer Advocate contends that in order for the IRP process to be all inclusive and effective, the Company must be able to provide an analysis of the T&D system, independent

of any other matter under consideration (i.e., supply side resources, conservation measures, and load forecasts.) Using the analysis, the Company and committee members would then be able to identify the geographic areas where transmission and distribution system improvements can be avoided with the installation of DG projects.

The Company has stated in the IRP presentations that the integration process is where T&D system issues will be addressed. In addition, the T&D system has been explained as being the connection between the generation of energy to the end-user. Thus, it is reasonable to expect that an assessment of the impact of various action plans on the T&D system be provided to the IRP committee members to allow the members an opportunity to assess whether a specific plan will require T&D system improvements, avoid the need for such improvements, or have no affect at all. In addition, it would be reasonable to expect the Company to identify the actions that it believes are necessary in order to plan for a reliable transmission and distribution system, based on the forecasted load and generation needed to serve the load. (See slides 13 and 17 of the April 23, 2004 Integration Committee meeting.) The Company has recognized that DSM, DG installations and

CHP installations can affect the T&D system needs. (See slides 17-22 of the April 23, 2004 Integration Committee meeting.)

If yes, please explain the CA's understanding of the process.

RESPONSE: See response to the first part of this request above.

If no, please outline the process that would need to be implemented for the IRP.

RESPONSE: See response to the first part of this request above.

HECO/CA-DT-IR-11 Ref: CA-T-1, Page 73, Lines 8-16.
Have other utilities incorporated the proposed process of integrating DG into their IRP process?

RESPONSE: Yes, other utilities are including DG in their IRPs.

If yes, please provide the names of the utilities and related documentation.

RESPONSE: The following is a list of names of utilities with IRPs including DG. This list is not a comprehensive list.

1. PacifiCorp – wind, geothermal, solar;
2. Puget Sound Energy – fuel cells, microturbines, mini-turbines, reciprocating engines;
3. Austin Energy (Austin, Texas) – solar, wind, biogass; DG-fuel cells, CHP wind, small gas generators, solar;
4. Avista;
5. Idaho Power;
6. Nevada Power; and
7. Portland General Electric.

See also www.westgov.org/wieb/electric/distgen/westutil_dg.pdf for information regarding DG in western mainland utility IRPs.